

Date: Wed, 1 Dec 93 04:30:33 PST  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Space Digest V93 #96  
To: Ham-Space

Ham-Space Digest                      Wed, 1 Dec 93                      Volume 93 : Issue    96

Today's Topics:

    APT-Satellites: Report NOV 28, 1993  
    Building PC Based Satellite Station  
    Control of Amateur Satellites  
    EJASA: SETI Information Source

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>  
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 29 Nov 1993 08:45:06 GMT  
From: ucsnews!sol.ctr.columbia.edu!xlink.net!gmd.de!  
peter.henne@gmd.de@network.ucsd.edu  
Subject: APT-Satellites: Report NOV 28, 1993  
To: ham-space@ucsd.edu

Observed at station 50.7 NLat, 7.1 ELon, NOV 28, 1993

NOAA-9:        APT 137.62 On  
NOAA-10:       APT 137.50 On  
NOAA-11:       APT 137.62 On  
NOAA-12:       APT 137.50 On  
Meteor 2-21:   APT 137.85 On  
Meteor 3-3:    APT 137.30 On

Now all NOAA's switch from ch.2 (vis) to ch.3 (IR) when  
approaching night-parts of their orbits. The Meteor's transmit  
only vis from illuminated parts, as the descending passes are  
more and more earlier at morning (exspecially weak Meteor 2-21)

they will become somewhat useless for stations above 40 deg northern Latitude. Hoping for Meteor 3-6, tentative launch-date NOV 29 (info from Mike Kenny, Bureau of Meteorology, Australia).

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|Peter Henne (peter.henne@gmd.de)      |
|      (henne@gmd.de)                  |
|German Nat.Research Center.f.Comp.Science |
|D-5205 St.AUGUSTIN 1                  |
|Fed.Rep. of Germany                   |
+-----+
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Date: 29 Nov 1993 02:57:22 GMT  
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!gatech!  
usenet.ufl.edu!usenet.cis.ufl.edu!thanos@network.ucsd.edu  
Subject: Building PC Based Satellite Station  
To: ham-space@ucsd.edu

I would like to build a PC based weather satellite station.  
I would appreciate it if anyone out there provides info on  
schematics, resources, requirements, etc. I am just starting so I could  
use any help I can get.

I appreciate any help,

Thanos Karras

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Date: 28 Nov 1993 23:12:16 -0800  
From: swrinde!sgiblab!darwin.sura.net!howland.reston.ans.net!vixen.cso.uiuc.edu!  
qualcomm.com!qualcomm.com!not-for-mail@network.ucsd.edu  
Subject: Control of Amateur Satellites  
To: ham-space@ucsd.edu

In article <2d0g59\$429@reznor.larc.nasa.gov>,  
Steve Derry <s.d.derry@larc.nasa.gov> wrote:  
>For those of you who design, build, and operate amateur radio satellites --  
>What do you use for attitude control and knowledge?

For attitude determination, almost all have used sun and earth sensors.  
The UoSat series, built at U. of Surrey, have used flux-gate magnetometers.  
P3D, now under design, and the most ambitious amateur satellite to date,  
is planned to use GPS for attitude determination.

Several different methods of attitude control have been used.

Oscar-10 and Oscar-13 (highly elliptical orbits) use magnetorquers.

UoSat series has used a gravity gradient boom and magnetorquers.

AMSAT's microsat series uses 4 permanent magnets in the spacecraft body to align the spacecraft with the earth's magnetic field. A solar propeller (antenna blades painted white on one side and black on the other) spin the spacecraft (for thermal control), and finally hysteresis damping rods limit spin rate, and reduce oscillations. Note these spacecraft are in nearly polar orbits, so the magnets cause them to flip twice during each orbit.

P3D is planned to use momentum wheels.

>Is attitude control even necessary for small satellites?

Depends on what you're trying to do. If you're in a very low orbit, and use nearly omnidirectional antennas, for example, you care a lot less about attitude than if you're in a near-Molniya (highly elliptical) orbit, using high-gain antennas to allow low-power users on the earth to communicate while satellite is near apogee. Amateur radio satellites have covered all these cases.

>Also, is thermal control strictly passive, or are there heaters on board  
>your spacecraft?

Passive. (At least I don't know of any that have heaters. So many amateur spacecraft have been built, in so many countries, that it's quite possible that somebody threw in a heater and didn't tell me. :-> )

> Thanks!

For more information, may I suggest you join AMSAT, the non-profit group that builds and launches these puppies. There is an AMSAT organization in most major countries. In the US, call 301-589-6062.

A handy reference that lists summary information about many of the amateur spacecraft is: The Satellite Experimenter's Handbook, by Martin Davidoff, published by The American Radio Relay League, Inc, ISBN 0-87259-004-6. I believe you can buy a copy from AMSAT. 2nd edition was published in 1990, so it's a couple of years out of date, and doesn't list the last crop of amateur sats, but it's an excellent starting place.

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Date: 29 NOV 93 18:01:30 EST  
From: pa.dec.com!nntpd.lkg.dec.com!verga.enet.dec.com!klaes@decwrl.dec.com  
Subject: EJASA: SETI Information Source  
To: ham-space@ucsd.edu

EJASA: SETI Information Source

I am Larry Klaes, Editor of the Electronic Journal of the Astronomical Society of the Atlantic (EJASA), a position I have held since the founding of the EJASA in August of 1989.

The EJASA is published by the Astronomical Society of the Atlantic, Incorporated. The ASA is a non-profit organization dedicated to the advancement of amateur and professional astronomy and space exploration, as well as the social and educational needs of its members. The EJASA is a place for those on the Internet to publish their works on the field. The EJASA is published monthly and posted on the USENET astronomy and space newsgroups.

Numerous articles in the EJASA have been devoted to SETI and its related fields. Included among them is the original six-part paper by Dr. Stuart Kingsley of Columbus, Ohio on his work with Optical SETI in the January 1992 issue. Dr. Kingsley was profiled in the Summer 1993 issue of The Planetary Society's Bioastronomy News publication and spoke at the recent Bioastronomy Conference in Santa Cruz, CA.

Robert Dixon, head of Earth's longest-running SETI program located at Ohio State University, contributed an article on the project's history in the June 1992 issue of the EJASA.

The December issue will feature a SETI article by Guillermo A. Lemarchand from the University of Buenos Aires, Argentina.

The complete list of current SETI articles in the EJASA follows this paragraph. All are available either from me or the ASA anonymous FTP site at chara.gsu.edu (131.96.5.29).

"Does Extraterrestrial Life Exist?", by Angie Feazel - November 1989

"Suggestions for an Intragalactic Information Exchange System",  
by Lars W. Holm - November 1989

"Radio Astronomy: A Historical Perspective", by David J. Babulski  
- February 1990

"Getting Started in Amateur Radio Astronomy", by Jeffrey M. Lichtman

- February 1990

"A Comparison of Optical and Radio Astronomy", by David J. Babulski  
- June 1990

"The Search for Extraterrestrial Intelligence (SETI) in the Optical  
Spectrum, Parts A-F", by Dr. Stuart A. Kingsley - January 1992

"History of the Ohio SETI Program", by Robert S. Dixon - June 1992

"New Ears on the Sky: The NASA SETI Microwave Observing Project",  
by Bob Arnold, the ARC, and JPL SETI Project - July 1992

"First International Conference on Optical SETI", by Dr. Stuart A.  
Kingsley - October 1992

"Conference Preview: The Search for Extraterrestrial Intelligence  
(SETI) in the Optical Spectrum", by Dr. Stuart A. Kingsley  
- January 1993

I will make available upon request the complete list of EJASA  
back issues. I will be glad to send on-line copies of any issues  
to those who wish to see them. Readers are also welcome to submit  
papers on astronomy and space exploration for publication in the  
EJASA.

Regards,

Larry Klaes klaes@verga.enet.dec.com  
or - ...!decwrl!verga.enet.dec.com!klaes  
or - klaes%verga.dec@decwrl.enet.dec.com  
or - klaes%verga.enet.dec.com@uunet.uu.net

EJASA Editor, Astronomical Society of the Atlantic

"When we try to pick out anything by itself, we find it  
hitched to everything else in the Universe." - John Muir

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End of Ham-Space Digest V93 #96

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